


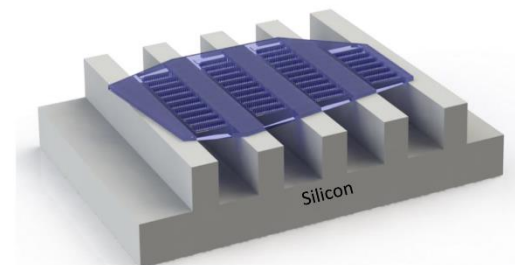
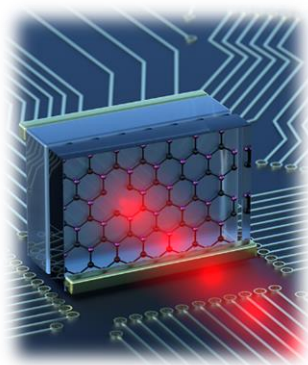
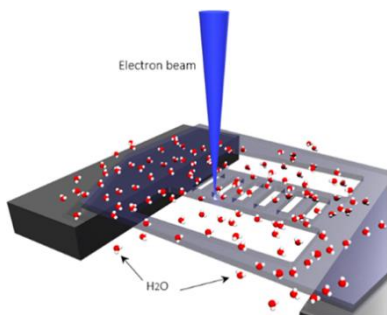


Seminar

Quantum emitters in hexagonal boron nitride

 Tuesday 11 June, 2019	Professor Milos Toth Professor in the School of Mathematical and Physical Sciences University of Technology Sydney
 11.00am	
 Science Lecture Theatre S11 16 Rainforest Walk, Monash Clayton Campus	

Abstract:



The wide bandgap van der Waals material hexagonal boron nitride (hBN) has emerged as a promising host of single photon emitters. Here, I will review the current state and roadblocks in understanding the photophysical, structural and chemical properties of these emitters, as well as functional properties that make the system appealing for integrated quantum photonics. I will also present demonstrations of coupling of the emitters to waveguides and resonators, with an emphasis on electron and ion beam techniques that have been developed to manipulate the properties of hBN and fabricate optical and optomechanical cavities from hBN. Finally, I will show that hBN emitters have nonlinear optical properties which make them suitable for applications beyond quantum photonics, such as probes for diffraction-unlimited fluorescence nanoscopy and atomic-size sensors for nanothermometry.

The Presenter:



Bio

Milos Toth obtained his PhD from University of Technology Sydney (UTS), and subsequently spent three years as a postdoctoral researcher at University of Cambridge, and seven years as a research scientist at FEI Company, U.S.A. Milos took up his current role at UTS in 2011, where he is a Professor in the School of Mathematical and Physical Sciences. His research is focused on solid state quantum photonics, 2D materials, and the development of novel nanofabrication techniques.

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